Community oriented primary care: a public health model in primary care*
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Primary care services constitute the initial contact between individuals and health care providers. However, the characteristics of these services, the spectrum of their activities, their achievements, and the barriers to access them vary among countries, depending on the health care service system established and the socioeconomic, cultural and political context prevailing within a particular country. Global interest and actions related to primary health care (PHC) increased substantially following the International Conference on PHC, held in Alma-Ata in 1978. However, the political decisions adopted and the organizational changes that have taken place have evolved unevenly. In fact, in response to the Declaration of Alma-Ata, different models of PHC were developed, generating questions regarding their effectiveness to improve the community’s health status.

This article analyzes the experiences in the application of the Community Oriented Primary Care (COPC) model, the training actions developed, and the opportunities and challenges that this model has generated.

COMMUNITY ORIENTATION

The different names adopted by the primary care systems, in both Spanish and English literature, make it difficult to create an exhaustive mapping of the different health care services provision models at a community level, and create confusion, not only in assessing its impact, but also in academia.

The community orientation of primary care is based on the principles of community medicine, whose primary elements are the active and detailed assessment of community health needs and the response to those needs, considering the community as a whole (1).

Community medicine must respond to five key identifying questions (2):
1. What is the community’s health status?
2. What are the factors responsible for this health status?
3. What have the community and the health service system done about it?
4. What more can be done and what would be the expected outcome of those actions?
5. What measures are needed to continue the health surveillance of the community and to evaluate any changes to its health status?

The answers to these questions allow us to draw a clear distinction between community medicine and the mere location of health services in the community. The confusion between these two concepts has made it difficult to appreciate the scope of community medicine.

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COMMUNITY ORIENTED PRIMARY CARE

COPC is a practical model whose purpose is to rationalize, organize, and systemize existing health resources through interventions that reflect the principles contained in the Declaration of Alma-Ata (3-5).

The COPC model emerged in the 1940s, as an extension of family medicine, thanks to the work and dedication of two family practitioners, S.L. Kark and E. Kark, in a rural area of South Africa. The basic concepts and methodology were developed from the combined application of epidemiology and social and behavioral sciences. The implementation of this PHC model in South Africa was interrupted by the apartheid policy, which highlights the relationship that exists between the social justice dimension of this model and the political environment in which it is applied. Later, the COPC conceptual and methodological framework continued to be developed at the Community Health Center of the School of Public Health and Community Medicine of Hadassah and The Hebrew University of Jerusalem, in Israel (6).

COPC is a continuous process in which primary care is implemented in a specific population according to its health needs, through the planned integration of public health actions and primary care practice (7).

COPC services take responsibility for the health (and its determinant factors) of all the members of a community (8), including both those who utilize their services and those who do not. This model is different from traditional primary care, which focuses on curing, responding only to the demand and treatment of symptoms and illnesses.

Main Elements of COPC

The COPC structure incorporates various elements and conditions, such as:

a) a defined population, with a geographic base or certain common characteristics, such as the students of a school, the workers in a factory, or the members of a health clinic or health center; it includes, in all cases, all the members of the population;

b) a PHC clinic;

c) a multidisciplinary team, according to available resources;

d) free access to services, without economic, fiscal, gender, religious, cultural, or political barriers;

e) a professional team that brings together clinical, epidemiological, and social and behavioral sciences skills;

f) mobilization of the professional team outside of the clinical facilities to be able to directly assess the physical and social health determinants and the microenvironment and community resources; and

g) community participation (individual and collective) in health care and improvement activities; behaviors, attitudes, and beliefs are very closely related to an individual's health decision-making process.

This approach enables the health care provider team to know the members of the community for whom they are responsible. The population covered constitutes the
common denominator, based on which illness prevalence and coverage rates will be calculated and demographic monitoring will be executed.

To achieve its objectives, COPC needs to share its actions with other sectors through cross-sector coordination, since health services alone cannot respond to all the needs of the population.

**COPC Development Process**

COPC is a continuous and systematic process, consisting of the following stages:

**Defining the Community.** The population for which each PHC service is responsible must be defined. In urban populations or surrounding areas, the population’s migration and presence of undocumented people, for example, makes it difficult to arrive at a definition of the target population, since some community members may go to more than one health care facility in their area or in neighboring areas. The characterization of the community’s physical, demographic, and social structure and of the services available in it, as well as the determination of their health needs, must be accomplished with existing quantitative and/or qualitative data. However, one of the challenges in this stage is the absence of data, infrequent updating of data, or lack of correspondence with the target population. In some cases, one must analyze whether the existing data are applicable to a specific community and whether they should be extrapolated.

In recent years, there has been more access to electronic information, both data and maps that reflect the specific characteristics of a territory. For example, programs based on geographical information systems (GIS) allow us to represent patient and event distributions in an area and learn the degree of penetration of health services within the population (9). The information obtained in this stage is used as a foundation for the analysis of the main health problems and as input for the next stage.

**Prioritizing.** One of the characteristics of the COPC model is that it selects a health problem or a set of health problems through the analysis of priorities. For that purpose, it must take into account the following elements (10):

- the relative importance of the health problem (magnitude, severity, and economic impact);
- the feasibility of an intervention (available resources, compliance with health policy, and interest of the health care personnel);
- predicted effectiveness of the intervention (evidence of effectiveness and local factors related to effectiveness);
- justification of the costs (according to each health problem); and
- community interest (according to the previous components).

This prioritization is determined by a scoring system agreed upon beforehand by the members of the health team. In order to continue the model development process, those health problems that receive the highest score are selected. The professional team must analyze the appropriate way to achieve (according to local cultural values) the community’s integration and active participation in the decision-making process.
In this way, we can optimize the use of human and economic resources, and avoid spending time and resources in the study and analysis of conditions that cannot be or will not be answered in a systematic manner.

**Planning the “Community Diagnosis”**. To determine the existing community health problems, the physical, biological, physiological, and social determinants of the selected problem and their distribution must be measured. One characteristic of the COPC model is that, for this diagnosis, only the health problem that was selected as a priority is analyzed in-depth.

**Implementing Community Health Programs**. In this stage the physical, mental, and social elements of the selected health problem are taken into account. If possible, all the stages of the illness’ natural history must be covered, and the promotion, prevention, diagnosis, treatment, and rehabilitation functions must be integrated.

**Program Surveillance**. This stage includes not only monitoring the activities and performing demographic surveillance in order to detect changes in the target population, but also following up on the evolution of the population’s health status during the execution of the program.

**Evaluating the Impact and Effectiveness of the Program**. This is an integral part of the service provided to the population that can be accomplished through a review of the program or a program trial (11). The review (“before and after” status) is based on the assumption that the intervention is beneficial, while the program trial evaluates its potential effectiveness, and requires a control group and more resources.

**Analysis of the New Situation**. During this “reassessment” a decision is made as to whether the program is kept, modified, or cancelled, new priorities are established, and a new cycle of the COPC development process is initiated.

**COPC IMPLEMENTATION: EXAMPLES**

**North America**

In the United States of America and Canada, there is a history of more than 50 years teaching and implementing the COPC model. Currently, teaching the COPC model has been expanded to numerous health sciences academic institutions and General Medicine residency programs (12). The School of Public Health and Health Services at The George Washington University, in Washington, D.C., offers a Master of Public Health in COPC.

The growing interest in COPC education in the United States has brought the combined analysis of the difficulties found in its application. Some authors contend that the existing gap between the extensive teaching of the model and its continued limited application in this country is due to the difficulties imposed by the complex
methodological requirements (13), while others interpret it as a consequence of the organizational characteristics of the American health services (14).

**Latin America**

The community orientation of health care services in Latin America has its roots in the curriculum changes introduced in the 1970s by Cesar Garcia, among others (15). Those changes were related to the health services situation and promoted curriculum changes in medical education—based on innovative teaching methodologies—and reorganization of the contents of the medical career. In 1969 the Faculty of Medicine in the University of Montevideo, Uruguay established a teaching system based on cycles, that started with the “basic cycle”, in which groups of students analyze a health problem (for example, tuberculosis) in a community during a period of six months. This health problem is approached in a holistic way, in terms of local health services and with the support and supervision of a multidisciplinary faculty team, of which one of the authors of this article was a member (JG). The interruption of this plan of studies in 1973 made it impossible to evaluate its effect on the future practice of medicine. In 2005, the proposed health care reform in Uruguay was directed at the community orientation of the first level of care, which parallels the principles of COPC.

In 1987, Braveman and Mora (16) claimed that the concept of COPC was well known to the promoters of community medicine in Latin America. The movement was associated with the changes introduced in medical curricula as a result of two predominant tendencies in those years: linking professional training programs with health system needs and acknowledging the limitations of medical teaching based on the curative model of hospital care. These authors analyzed the processes of change in medical education and the health status in countries in the region that, at the time, were fundamental for the development of the COPC model (Costa Rica, Mexico, and Nicaragua).

In Colombia, Klevens and associates (17) described the relationship existing between the curriculum changes that had to be made in the medical career and the eventual introduction of the COPC model in the practice. The relationship between teaching and practice took place through the COPC training of the PHC teams of six health centers (three urban and three rural) and the students’ participation in the application of the model in those centers. In this case, the physicians were assigned to the academic institution.

The development of COPC was evaluated using a scale created for that purpose by the Institute of Medicine in the US (18). The results showed the students satisfaction with respect to the program, the advance in its modification, and the increase in community participation, although the effect on COPC functions was minor. Changes in the academic sector and the political environment determined the interruption of these programs.

In an exhaustive study of integrated health systems in Central America, Barrett (19) analyzed the application of the COPC model and other similar models. In that analysis, the difficulties of integrating those models into existing health systems are apparent, due to governments’ lack of political will and the cultural values predominant in those countries.
Ventres and Hale (20) analyzed the process of development of family medicine in Cuba and found that that system, based on COPC principles, was able to improve health indicators. It must be emphasized that to do that, it was necessary to apply “not only a series of community values, but also transparent management methods”. The primary care system in Cuba is based on the responsibility that the team of family doctors has for a specific number of families and community institutions located in their geographical area, as well as on the maintenance of a basic information system on the health of all the members of the community. All of these reflect the basic principles of COPC. A recent publication underscores the presence of the COPC model in the frame of family medicine in Cuba (21).

In Bolivia, the introduction of a population-based health care model aimed at obtaining changes (22), derived from the COPC principles, has permitted implementing mother and child programs, and defining and acting according to local health priorities. These changes contributed to increasing child health care coverage and reducing infant mortality in that country.

A recent and extensive study made by the Pan-American Health Organization (PAHO) on PHC in the Region, approved by its Directive Council in September 2005, proposes the adoption of a health care system based on primary care (23) and on principles that explicitly reflect the conceptual and methodological framework of the COPC model. The growing interest in the COPC model has been reflected in various recent publications on this theme in Spanish (24-26).

Spain

In reviewing COPC experiences in Spanish-speaking countries, the development that this model has had in Spain must be mentioned (27). After the completion of a COPC workshop in 1987, organized by the Catalan Society of Family and Community Medicine (SCMFyC, by its Spanish acronym) and directed by the authors of this article, 15 other workshops have been conducted in which more than 400 professionals have participated, primarily family physicians. As a result, COPC has become a component of the program of the residence in Family and Community Medicine since 1990. In 1987, after completing the first workshop, the COPC working group of the SCMFyC was created. Today, the group includes 12 family doctors and 6 public health technicians. The group has maintained extensive teaching activities in this Spanish region, which has contributed to implementing the model in over 23 PCH centers, 8 of which act as pilot centers for demonstration (28).

Among the developments in the Catalunya region that reinforce the importance of the model, the following can be mentioned: a) in 2003, the Institute of Health Studies of Barcelona created a workforce to promote the teaching of COPC in the medical curriculum; b) the AUPA (Actuando Unidos para la Salud) network was created (29), based on 20 of the aforementioned centers, to promote the training of personnel and the application of COPC in practice (30); and c) the Public Health Agency of the Health Department of Catalunya was created, and based on the principles of the COPC model, it proposes to integrate public health services at a local level with the PCH teams of the basic health areas in each territory (31).

The accumulated experiences in Spain that began with training workshops and strengthened with the application and dissemination of COPC in the country, has been
favored by: a) the reform of the health care system, based on national and regional policies that promote or facilitate the application of a community approach to care at a local level; b) the development of specific skills by family doctors, to identify health needs and plan interventions; c) the motivation of professionals and of the health care team to follow a community approach; and d) the leadership role played by family medicine associations.

EFFECTIVENESS OF THE COPC MODEL

In 1988, Abramson carried out an exhaustive review of the effectiveness of COPC, from the first experiences in South Africa until its application in different countries with different types of services and programs in the following decades (32). His work analyzes the positive contribution that this model has had on reducing infant mortality, monitoring child growth and development, reducing the prevalence and incidence of infectious diseases, increasing vaccination coverage, monitoring risk factors for chronic illnesses, and changing the population's attitudes towards adopting healthy habits and behaviors. More recently, a series of eight articles about COPC published in the American Journal of Public Health in November 2002, describes and analyzes the impact of COPC in different countries and contexts.

In one instance that took place in an urban area in Dallas, Texas, United States of America, a group of health professionals and community members adopted COPC as an appropriate health system for the community and were able to improve access to health services, reduce child and adult hospitalization times, and reach the lowest neonatal and infant mortality indexes in the US (33). There were also noticeable improvements in continuity of care, and greater community participation in the management of programs and decision making process on community priorities (33).

In a completely different context, the application of COPC programs in Jerusalem, Israel, yielded improvements in the level of child development by using an early stimulation program, increased breastfeeding rates, reduced the prevalence of anemia during pregnancy and childhood, and improved the oral health status of the population (34). Also, it reduced the incidence of tobacco use and improved the level of control of arterial hypertension (11, 34). The implementation of the COPC model in Jerusalem was facilitated by important academic support.

In another dimension that is seldom mentioned when analyzing the work of Kark’s team, the COPC programs contributed to increasing the integral development of the community. In this sense, community participation and organization increased, the environment improved—due to both sanitation efforts and the organization of cooperatives—and the members of the community were trained to be part of the health team. This community development was later reflected in an increase in educational options for the members of the community in many different contexts, such as Polela, South Africa (6), and Mississippi, United States (35). These results reflect the positive effect that COPC can elicit in the economic and social development of a community, and demonstrate that health interventions can contribute to reduce poverty.

After a myriad of PHC services reform, the National Health Services in the United Kingdom (UK) promoted the development of community models, such as COPC (36), even though that same dynamic reform process makes it more difficult to sustainably
apply COPC. In South Africa, where there is political support that prioritizes primary care, the socioeconomic and cultural context limit the expansion of the COPC model (37).

In transitional societies that suffer from deterioration of their health system, e.g. Russia, the application of the COPC principles has, in its first stage, improved asthma and diabetes care, increased breastfeeding rates, and reduced the prevalence of cavities in the pediatric population. For that purpose, they have introduced changes in the information systems and teamwork, have adapted clinical work guidelines to reflect local resources, and have coordinated the work with the authorities and the community (38).

TRAINING IN COPC

Several authors have emphasized the importance of teaching COPC, both in industrialized countries, such as the United Kingdom (39, 40), as well as in rural areas (41, 42), and in developing countries, such as African nations (43).

Due to specific characteristics of this model, teaching COPC requires the active collaboration of the participants in order to be able to be trained on the different stages of its implementation. Workshops are the most useful methodologies for COPC training. (1).

The training programs must take into account the following elements:

• The purpose of the training program must be clear and explicit, defined by the institutional level in which the training takes place;
• The learning objectives must be aimed at contributing to the future work of the participants. For example, they could be aimed at learning and applying the COPC principles and methods, or at training in how to solve difficulties encountered during the implementation of the COPC approach;
• The active and systematic planning [for the implementation of COPC] must be based entirely on real community data and on the existent health care services so that the participants have an experience that is highly applicable;
• The courses and workshops must be based on the work of multidisciplinary teams, made up of participants with diverse professional backgrounds and different experiences, such that they resemble the composition and dynamics of health teams;
• One of the specific assignments must consist of elaborating a proposal for the application of COPC programs developed in the workshop—accounting for not only the feasibility of the proposal, but also the expectations of the institutions to which the participants belong to.

The experiences derived from the workshops have been useful and in many cases, the proposals developed in the workshops became the foundations for the implementation of COPC programs at the participants' services. In Catalonia, Spain, workshop participants were part of the teams that implemented the COPC programs at PHC centers in six health care areas in the region (28). In London, UK, the implementation at 11 PHC services of the programs developed during the training of family practitioners, allowed for the improvement of the health status of the population covered by the programs and perfected the work in teams (36). According to the
evaluations completed three to five years after the workshops organized in the framework of the International Masters of Public Health in Jerusalem, Israel, more than half of the professionals reported that they were applying components of the COPC model (34), while the Family Medicine residents of Hebrew University in Jerusalem, reported the positive impact that the training on COPC had on their professional performance (44).

COPC AND ITS PUBLIC HEALTH FUNCTIONS

Due to the role that COPC plays in solving the main health problems of the community as a whole and of its individual members, it fulfills functions of public health. Those functions include: planning preventive activities at the population level, promoting the participation of the community in improving its own health, and coordinating across sectors various activities to the benefit of the community. For this purpose, health care workers dedicated to COPC rely on their knowledge of epidemiology and social and behavioral sciences, on organization according to the principle of decentralization, and on working toward clear objectives.

In addition, public health benefits from the specific actions of COPC, since it covers demographic and health care surveillance activities; participates in the evaluation of local action programs, population screenings, and evaluation of interventions at the individual, family and community levels; and adopts an active role in individual, family, and community counseling.

However, it is still necessary to strive to reach universal access to services and—together with other sectors of society—decrease health disparities. Thus, the COPC model provides a path to reorganize health services in order to achieve the integration of individual medical care with public health (45, 46).

CHALLENGES AND OPPORTUNITIES IN THE APPLICATION OF COPC

The trends in the health status of populations, combined with the reforms of health systems, offer challenges, but also opportunities for the application of COPC in the Region.

From a public health viewpoint, population aging, migration from rural zones to urban zones, and epidemiological transition—with the growing incidence of chronic diseases and the emergence and reemergence of infectious diseases—constitute challenges to the capacity of health services to respond to changing needs at the local, national, and regional levels. On the other hand, health care reforms—which have generated tensions between public and private services—, the increase in service costs due to the use of advanced technologies, and the demands of professionals’ trade unions show a reality in which improving the health of the population is not always considered a goal.

The studies made by PAHO about the role of PHC and the Declaration on Renewing PHC, approved by its Directing Council (23), offer new opportunities for change.

Many of the proposed changes to PHC coincide with the principles of COPC. However, in order to apply them, more training is necessary, not only for physicians, but
also for other health related professionals. In other words, if this is the focus with which PHC is to be approached, then applying it involves not just locating general physicians and specialists in the community, but also training them, both on PHC and on COPC. The training requires services that apply and evaluate the COPC model.

If PHC is to have the appropriate hierarchy, teaching programs and research must be integral parts of health services. Both elements are essential to be able to improve the health status of the population and the training and development of professionals. In addition, to achieve the necessary changes, community-oriented health policies, motivated health teams, and essential human and financial resources are required.

In conclusion, in the COPC model, health services assume the responsibility for the health of a defined population in which, in addition to the treatment of illnesses, health promotion, prevention, and maintenance programs are developed. Thus, COPC integrates individual clinical care and family care with public health. COPC reflects the “spirit of Alma Ata” and constitutes a systematic process that is flexible enough to adopt the principles and adapt the methodologies to the reality and local resources of the health team and the community.

**SYNOPSIS**

**Community-oriented primary care: a public health model in primary care**

The community-oriented primary care (COPC) model strives to efficiently distribute, organize, and systematize existing health care resources. In addition to promoting health lifestyles within the community, the COPC model enables the health care team and the community to cooperate in identifying and prioritizing health issues. Together they develop and implement prevention and treatment plans for those priority areas. With COPC, the health services assume responsibility for the health of a defined population. The health services not only treat diseases but also develop programs for health promotion, protection, and maintenance COPC integrates individual and family clinical care with public health, reflecting the spirit of the International Conference on Primary Health Care held in Alma-Ata in 1978. COPC is a systematic process, with flexible principles and methodologies that can be modified to meet the specific challenges of any health care team and community. An analysis of various countries’ experiences with COPC shows that applying the model appropriately can improve the general health status of the community and its members.

**Key words:** primary health care; community health services; community medicine; education; public health professional.
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